

Case Report

Sclerosing adenosis clinically feigning as carcinoma breast: A case report

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Abstract

Sclerosing Adenosis (SA) is a lobulocentric proliferative process that involves both the epithelial and the mesenchymal component of the breast suggesting benignity. The disease has an increased incidence among reproductive-age and perimenopausal women, especially between 35 and 50 years of age. The clinical, radiological, and histopathological properties of sclerosing adenosis may resemble malignancy, which is the factor responsible for the clinical significance of the disease. Early diagnosis of sclerosing adenosis (SA) is very important as it is associated with a doubling of the risk of developing breast carcinoma, even though its role in carcinogenesis remains to be controversial and unclear. The main histopathological alterations of the terminal ductal lobular unit (TDLU) present as a widening and distortion of lobules with an increased number of acini and stromal fibrosis. The lesion is also called an “adenosis tumor of the breast” or “nodular sclerosing adenosis” if it presents as a palpable mass. Sclerosing adenosis is present in 12% of benign proliferative lesions and 20-25% of malignant lesions on histopathological examination. On mammography (MG), it can present as opacity, focal asymmetry, architectural distortion, or micro calcifications, mimicking a carcinoma. We have presented a case of 42 year old female who was diagnosed as carcinoma breast clinically and on radiology. Mammography showed a fibrosed lesion of size 4.5x3 cm with focal specks of microcalcification and irregular borders. But repeated fine needle aspiration cytology (FNAC) smears revealed small and large clusters of ductal epithelial cells with minimal anisonucleosis with background showing amorphous crystalline material and stromal fragments. Basing on FNAC, plan of surgery changed and a wide local excision with 2 cm normal margins was done and the specimen sent for histopathological examination (HPE), which revealed the lesion as sclerosing adenosis (SA).

Key words

Sclerosing Adenosis, Carcinoma breast, Proliferative breast lesion, Histopathology, p63, High molecular weight cytokeratin (HMW-CK).

Introduction

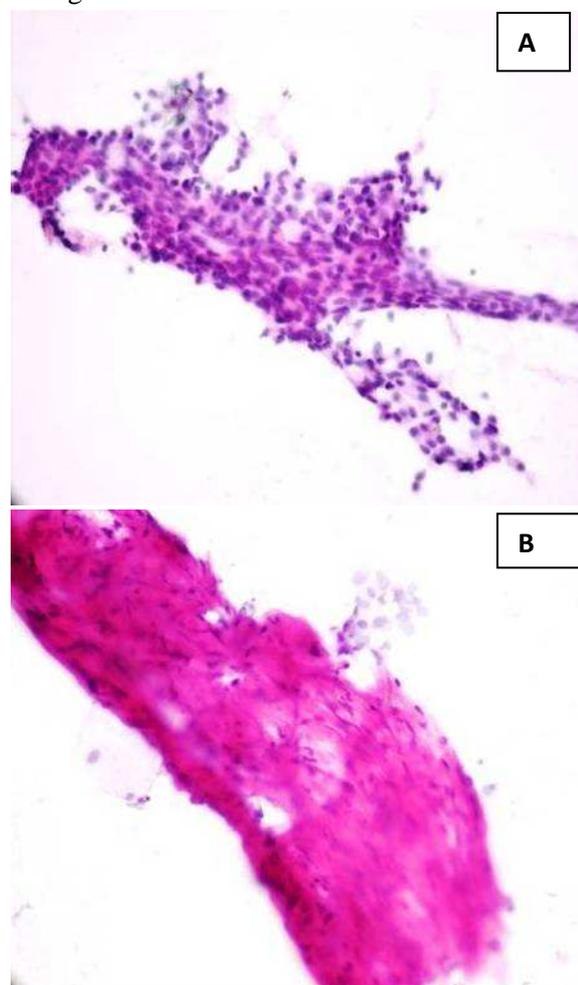
Sclerosing adenosis (SA) has been recognized since the late 1940 is a benign proliferative lesion of disordered acinar, myoepithelial, and connective tissue elements, which can mimic infiltrating carcinoma both grossly and microscopically. Sclerosing adenosis (SA) has achieved its recognition as an important entity to a clinician, as it mimics carcinoma breast clinically and on mammography. It is widely accepted as the benign lesion most commonly misinterpreted as invasive carcinoma. The lesion is also called an “adenosis tumor of the breast” or “nodular sclerosing adenosis” if it presents as a palpable mass. On mammography (MG), it can present as opacity, focal asymmetry, architectural distortion, or micro calcifications, mimicking a carcinoma. The exact etiology of SA is not known. It has been speculated to be an abnormal pattern of age-related regression or an abnormality of the involutinal process of breast tissue after lactation. According to few authors, SA actually represents a proliferative process which can lead to carcinomatous change [1, 2]. We have presented a case of 42 year old female who was diagnosed as carcinoma breast clinically and on radiology.

Case report

A 42 year old patient came to the surgical outpatient department with complaints of painless swelling in the right breast since one year. She complained of irregular menstrual cycles since 2 years. Patient had three living children; all were breast fed for about 1 year each. On examination, a lump was noted in right breast, upper inner quadrant. Size of the lump was 3x2 cm, ill-defined lump with irregular borders, firm to hard in consistency. Nipple showed mild retraction. Mammography showed mass of 3.1x1.8 cm with irregular margins and specks of calcification suggesting diagnosis of carcinoma breast. Patient was sent for fine needle

aspiration cytology (FNAC). Repeated aspirations showed a possibility of benign proliferative breast disease with minimal anisonucleosis, fibromyxoid and fibrocollagenous stromal elements and degenerative changes (**Figure – 1A, 1B**).

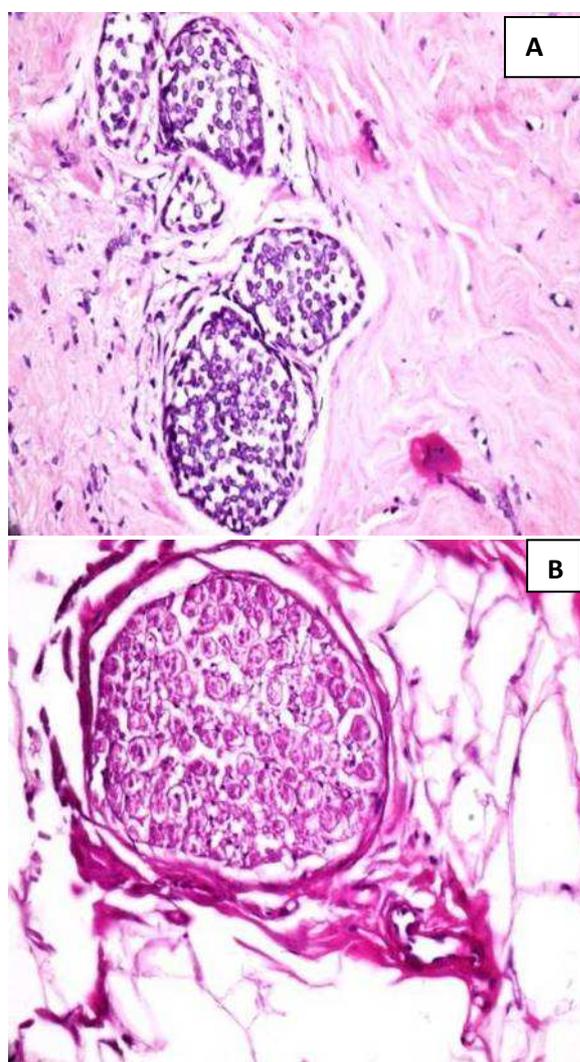
Figure - 1A, 1B: Smears show low to moderate cellularity with varying amounts of bland epithelial cells forming cohesive epithelial groups and tubules with occasional angulated configuration.



Wide local excision of the breast lump was done and sent for histopathological examination (HPE) which proved clinical diagnosis of carcinoma wrong. Grossly, received two gray white to gray yellow masses measuring 3x3x2 cm and

2.5x2x1.5 cm. Representative areas were processed and slides were made. Histopathological examination showed histological features of Sclerosing Adenosis (SA) (**Figure – 2A, 2B**). Further, Immunohistochemistry (IHC) was also done with markers p63 and High Molecular Weight Cytokeratin (HMW-CK) (**Figure – 3, 4**).

Figure – 2A, 2B: At low magnification, histopathology sections show a lobulated configuration consisting of proliferating acini and tubules surrounded by dense fibrous stroma.



Discussion

Sclerosing adenosis is a benign proliferative breast disease that presents with acinar, myoepithelial, and connective tissue changes in the terminal ductal lobular unit and is frequently

seen in the perimenopausal period. The etiological factors of Sclerosing Adenosis (SA) are not known. Haagensen defined SA as “a phenomenon of the menstrual phase of life”, suggesting that estrogens induce the epithelial proliferation that predisposes to the development of adenosis and other epithelial tumors [3]. SA is frequently asymptomatic and is an incidental finding on mammographic screening or histopathological examination performed for other reasons, where it is detected as a focal or diffuse lesion [3, 4]. When it presents as a palpable mass, it is defined as “nodular sclerosing adenosis” or “adenosis tumor”; this variant is generally found in patients with a broader age range, where most women are aged 30 to 45 years [3]. According to Visscher, et al., Sclerosing Adenosis (SA) is more common in perimenopausal women; in those with a strong family history with at least one 1st degree relative, or 2 or more relatives with at least one of 1st degree developing breast carcinoma by the age 50 years); in those undergoing postmenopausal hormone therapy, and among multiparous women [5]. Histologically it is a complex lobulocentric lesion characterized by enlarged, distorted lobules containing duplicated and crowded acini (ductuli) whose luminal epithelial and myoepithelial components and basal membrane are however preserved [5]. Stromal fibrosclerosis involves at least half of the terminal duct lobular unit (TDLU), which is elongated, distorted and compressed by the sclerosis [6]. Lesion extension ranges from microscopic foci smaller than a normal lobule to a confluent process where the marked cellularity and the involvement of both the epithelial and the mesenchymal compartment mimic a carcinoma on gross and microscopic examinations. The preserved lobular architecture that can be appreciated at low magnification is useful in the differential diagnosis from carcinoma, even though Sclerosing Adenosis may extend to adipose tissue or even invade perineural structures [7, 8]. At high magnification, identification of myoepithelial cells and the intact basal membrane allow confirmation of the non-invasive nature of the

process. Thus histopathological examination is an important diagnostic modality in diagnosing sclerosing adenosis from carcinoma in situ, which cannot be done on radiology.

Figure - 3: Microphotograph of IHC marker High Molecular Weight cytokeratin (HMW-CK) showing intact epithelial cells without any epithelial cells in the stroma indicating benign nature of tumor (Brown colour is positive).

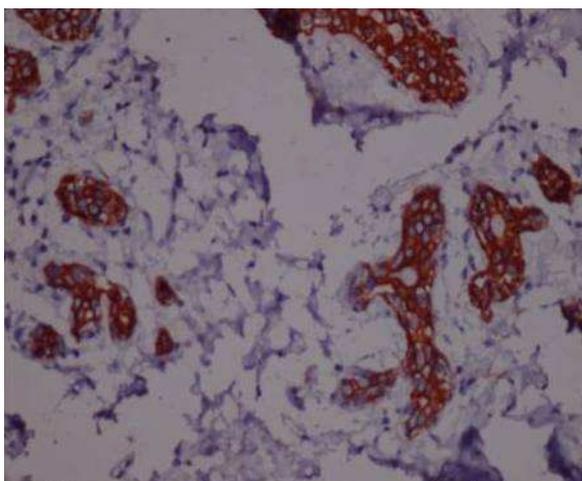
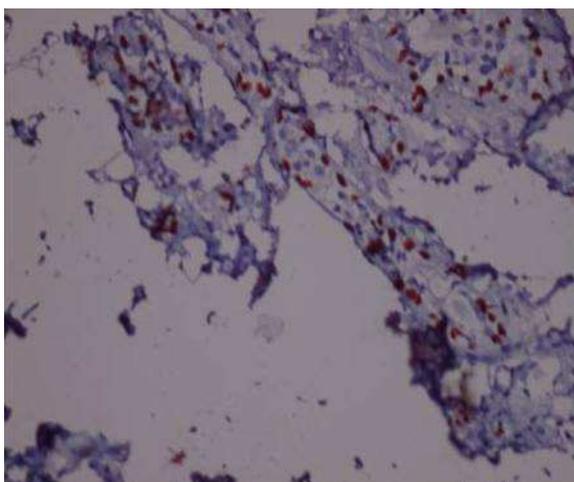


Figure - 4: Microphotograph of IHC marker p63 showing myoepithelial cells indicating the benign nature of the tumor (Brown colour is positive).



Conclusion

Sclerosing Adenosis is a common, benign, generally asymptomatic proliferative lesion of

the breast. It is associated with a doubling of the risk of developing breast carcinoma, even though its role in carcinogenesis remains unclear. It does not exhibit distinctive Mammography, Ultrasound or even MRI features. Since it may mimic a carcinoma, it requires further investigation with a histopathological examination, which gives definitive diagnosis.

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